



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,455	02/24/2004	Kei Sakagami	B-5382 621724-9	4911
7590 LADAS & PARRY Suite #2100 5670 Wilshire Boulevard Los Angeles, CA 90036-5679		07/18/2007	EXAMINER PAUL, DISLER	
			ART UNIT 2615	PAPER NUMBER
			MAIL DATE 07/18/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/786,455	SAKAGAMI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Disler Paul	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/24/04; 8/4/05</u> .   | 6) <input type="checkbox"/> Other: ____                           |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2; 4-5; 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwamatsu et al. (5,727,067).

Re claim 1, Iwamatsu disclose a circuit for processing multichannel audio signals (fig.1/ Lt, Rt to be processed), comprising: a frequency characteristics correction device for correcting frequency characteristics of an audio signal of a channel comprising an audio signal component having a predetermined frequency band, of audio signals of a multichannel comprising at least a right channel and a left channel, in accordance with correction characteristics determined based on a head related transfer function (fig.1 (66); col.4 line 43-54; col. 2 line 55-60); and an output device for mixing the audio signal component having the frequency characteristics corrected with an audio signal of the right channel and an audio signal of the left channel to generate mixed output audio signals, and outputting said mixed output audio signals as a right

channel output audio signal and a left channel output audio signal  
(fig.1 (62,72) & ((52,54) , (30,38); col.4 line 36-40 & 55-65).

Re claim 2, the circuit as claimed in claim 1, further  
comprising: a signal extracting device for extracting the audio signal  
component having said predetermined frequency band from the audio  
signal having the frequency characteristics corrected by said  
frequency characteristics correction device, said output device mixing  
the audio signal component as extracted, having the predetermined  
frequency band with the audio signal of said right channel and the  
audio signal of said left channel to generate mixed output audio  
signals, and outputting said mixed output audio signals as a right  
channel output audio signal and a left channel output audio signal  
(fig.1 (34); fig.3(80); col.5 line 50-60).

Re claim 4, the circuit as claimed in claim 1, further  
comprising: a device for mixing the audio signal of said right channel  
with the audio signal of said left channel to generate a mixed input  
audio signal, said frequency characteristics correction device  
correcting frequency characteristics of said mixed input audio signal  
(fig.1 (66,72,58)/ wherein in mix signals corrected with corrector; &  
further col.4 line 55-65).

Re claim 5, the circuit as claimed in claim 1, wherein: the audio signals of said multichannel comprise an audio signal of a central channel, said frequency characteristics correction device correcting frequency characteristics of the audio signal of said central channel (fig.1 (14,66)).

Re claim 7, Iwamatsu disclose the circuit as claimed in claim 1, wherein: said predetermined frequency band comprises frequency bands corresponding to a human voice (col.3 line 42-50).

Re claim 8, the apparatus for reproducing multichannel audio signals, comprising: a decoder for decoding input audio stream data to generate audio signals of a multichannel (fig.1 (14)); and a circuit for processing multichannel audio signals, said circuit comprising (i) a frequency characteristics correction device for correcting frequency characteristics of an audio signal of a channel comprising an audio signal component having a predetermined frequency band, of audio signals of a multichannel comprising at least a right channel and a left channel, in accordance with correction characteristics determined based on a head related transfer function (fig.1 (66)); and (ii) an output device for mixing the audio signal having the

Art Unit: 2615

frequency characteristics corrected with an audio signal of the right channel and an audio signal of the left channel to generate mixed output audio signals, and outputting said mixed output audio signals as a right channel output audio signal and a left channel output audio signal fig.1 (62,72) & ((52,54) , (30,38); col.4 line 36-40 & 55-65).

Re claim 9 has been analyzed and rejected with respect to claim 1 above.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamatsu et al. (5,727,067) and further in view of Rishoj ("US 2003/0142830 A1").

Re claim 6, the circuit as claimed in claim 1, But, Iwamatsu et al. fail to disclose of the specific limitation wherein: said correction characteristics are determined based on a ratio of the head related transfer function for a sound, which is propagated in a straight direction to a front side of an audience, to the head related transfer function for a sound, which is propagated to the audience in

Art Unit: 2615

a direction deviating rightward or leftward from said straight direction by a predetermined angle. But, Rishoj disclose a system wherein similar concept of correction characteristics are determined based on a ratio of the head related transfer function for a sound, which is propagated in a straight direction to a front side of an audience, to the head related transfer function for a sound, which is propagated to the audience in a direction deviating rightward or leftward from said straight direction by a predetermined angle (fig.1-4; page 4-0093-4) for the purpose of improving the perceive voice qualities and musical instrument of stereo image. Thus, taking the combined teaching of Iwamatsu et al. and Rishoj as a whole, it would have been obvious for one of the ordinary skill in the art to modify Iwamatsu et al. by incorporating the correction characteristics are determined based on a ratio of the head related transfer function for a sound, which is propagated in a straight direction to a front side of an audience, to the head related transfer function for a sound, which is propagated to the audience in a direction deviating rightward or leftward from said straight direction by a predetermined angle for the purpose of improving the perceive voice qualities and musical instrument of stereo image.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamatsu et al. (5,727,067) and further in view of Scofield ("US 2002/0006206 A1").

Re claim 3, the circuit as claimed in claim 2, But, Iwamatsu fail to disclose of the further comprising: a device for extracting an audio signal component having other frequency band than said predetermined frequency band from the audio signal having the frequency characteristics as corrected to generate an extracted audio signal, and outputting said extracted audio signal as a central channel output audio signal. However, Scofield disclose a system wherein the a device for extracting an audio signal component having other frequency band than said predetermined frequency band from the audio signal having the frequency characteristics as corrected to generate an extracted audio signal, and outputting said extracted audio signal as a central channel output audio signal (fig.22(462,478) to (476); page 9[0080]; page 11[0087] line 15-35; fig.25) for the purpose of enhancing the center channel contribution to the overall sound image during listening. Thus, taking the combined teaching of Iwamatsu and Scofield as a whole, it would have bee obvious for one of the ordinary skill in the art to modify Imatsu by incorporating such concept of having a device for extracting an audio signal component having other frequency band than said predetermined frequency band from the audio signal having the frequency characteristics as corrected to generate an extracted audio signal, and outputting said extracted audio signal as a central channel output audio signal for the purpose of enhancing the center channel contribution to the overall sound image during listening.




***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DP

  
PING LEE  
PRIMARY EXAMINER